

## REMARKS

Claims 1-33 are pending. Applicants request reconsideration in light of the following remarks. Applicants further request withdrawal of the outstanding rejections, and allowance of the claims.

The amendments to claims 1 and 18 are not necessitated by the prior art and are not made for reasons of patentability, but rather to further clarify Applicants' invention, particularly as set forth in the specification at page 10, beginning at line 20.

In the outstanding office action, the Examiner rejected claims 1-5 and 10-13 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,997,278 to Finlan et al. (hereinafter "the Finlan reference"). Applicants contend that all the claims are patentable over Finlan, and requests withdrawal of the rejection under 35 U.S.C. §102(b). Finlan teaches the use of an incident wave of energy that is in the form of a fan-shaped beam. As described in column 4, lines 42-44, the light is passed through a lens 14 that causes the light to converge to a point. Therefore, the incident light strikes the medium at a multitude of incident angles, and not at single incident angle. In view of this teaching away from Applicants' invention as defined in claim 1, the Finlan reference neither anticipates nor makes obvious the invention. Since claim 1 has been shown to be patentable over Finlan, at least for this reason claims 2-17 are also patentable over this reference. Further, Applicants' claim 18 contains limitations similar to those in claim 1, including the requirement that the incident wave is directed at a single incident angle with respect to the layered materials, and the fact that an intensity distribution within a transverse beam profile of a total reflected beam is measured. Therefore, Applicants' invention, as defined in claim 18 is also patentable over Finlan. Also, since claim 18 has been shown to be patentable over Finlan, at least for this reason claims 19-33 are also patentable over this reference.

In the outstanding office action, the Examiner rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,889,427 to Van Veen et al. (hereinafter "the Van Veen reference"). Applicants contend that claim 1 is patentable

over Van Veen, and requests withdrawal of the rejection under 35 U.S.C. §102(b). Van Veen teaches the use of an incident wave of energy that is reflected by the test medium and is measured. The measurement of the reflected beam involves measuring the total intensity of the light, and there is no disclosure or suggestion that a profile of the intensity of the light should be determined. Van Veen then optimizes the angle of incidence of the incident beam to achieve an angle of incidence that produces the least amount of reflected light ("sharp minimum"), again by measuring the intensity of the total light in the reflected beam. Once the angle of incidence is optimized, the dielectric constant of the test medium is changed, and the apparatus is re-tuned by varying the angle of incidence, to again achieve the sharp minimum. Since the dielectric constant has changed, a new angle of incidence is required to achieve this sharp minimum. This is illustrated by Van Veen in Fig. 2, where the minimums are given as a function of the angle of incidence.

In contrast to what is taught by Van Veen, Applicants' invention, as defined in their claims, involves using the same angle of incidence (once the apparatus is initially tuned) both before and after the dielectric constant is changed. Therefore, Van Veen does not anticipate or make obvious Applicants' claim 1. Further, in contrast to Van Veen's teaching, Applicants' invention includes measuring an intensity distribution rather than a mere aggregate light intensity to total intensity. For this additional reason, i.e., in view of this teaching away from Applicants' invention as defined in claim 1, the Van Veen reference neither anticipates nor makes obvious the invention. Since claim 1 has been shown to be patentable over Van Veen, at least for this reason claims 2-17 are also patentable over this reference.

Also, since Applicants' claim 18 contains limitations similar to those in claim 1, including the requirement that the incident wave is directed at a single incident angle with respect to the layered materials, and the fact that an intensity distribution within a transverse beam profile of a total reflected beam is measured, Applicants' invention, as defined in claim 16 is also patentable over Van Veen. Also, since claim 18 has been

shown to be patentable over Van Veen, at least for this reason claims 19-33 are also patentable over this reference.

In the outstanding office action, the Examiner also rejected claims 18-33 under 35 U.S.C. §103 as being unpatentable over either Finlan or Van Veen in view of the admitted prior art pertaining to known waveguide sensors. Applicants contend that all the claims are patentable over this combination of references, and requests withdrawal of the rejection under 35 U.S.C. §103. Although the structure of the layered materials can be the same in the method of the invention as in conventional measurement methods, as pointed out above, Applicants' invention, as defined in their claims, includes, *inter alia*, the provisions that the incident wave is directed at a single incident angle with respect to the layered materials, and the fact that an intensity distribution within a transverse beam profile of a total reflected beam is measured. These provisions are unknown in conventional waveguide mode sensors. Therefore, Applicants' invention is patentable over this combination of references.

In view of the above amendments and remarks, Applicants have shown that the invention, as defined in the claims, is neither disclosed nor suggested by the references of record. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of record, and allowance of all claims.